

DOCUMENT RESUME

ED 282 020

CE 047 113

AUTHOR Prickett, Charlotte
TITLE Masonry Curriculum.
INSTITUTION Northern Arizona Univ., Flagstaff. Center for Vocational Education.
SPONS AGENCY Arizona Occupational Research Coordinating Unit, Phoenix.
PUB DATE Sep 85
NOTE 209p.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS Articulation (Education); Behavioral Objectives; Building Trades; *Competence; Competency Based Education; *Construction (Process); Construction Materials; *Entry Workers; Hand Tools; *Job Skills; *Masonry; Postsecondary Education; Secondary Education; State Curriculum Guides; Vocational Education
IDENTIFIERS Arizona

ABSTRACT

This curriculum guide, written at the Arizona Vocational Educator's Curriculum Academy during July and August, 1985, was developed to complement the Arizona validated competency lists for construction trades. The writing team included tradespeople, secondary vocational educators, community college vocational instructors, and university professors of construction technology programs. This guide lists 20 competencies to be mastered by entry-level masons. For each competency, various tasks with their standard of performance, conditions for performance, source of the standard, and a performance guide are provided. A reference list and matrix of masonry competencies are included. These materials are intended to assist teachers in secondary and postsecondary vocational programs in developing a course of study, structuring learning sequences, determining standards of performance, and locating resources. (KC)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED282020

MASONRY CURRICULUM

BY

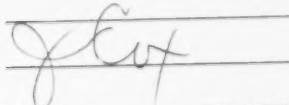
CHARLOTTE PRICKETT
PROJECT DIRECTOR

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☒ This document has been reproduced as
received from the person or organization
originating it.
- ☐ Minor changes have been made to improve
reproduction quality.

- Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY



TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

ARIZONA CENTER FOR VOCATIONAL EDUCATION
CENTER FOR EXCELLENCE IN EDUCATION
NORTHERN ARIZONA UNIVERSITY
FLAGSTAFF, ARIZONA 86011

September, 1985

BEST COPY AVAILABLE

CE 647113

ARIZONA DEPARTMENT OF EDUCATION



Carolyn Warner, Superintendent

Deputy Superintendent
Dr. Jim Hartgraves

Vocational Education Division
Mr. John T. Lange
Deputy Superintendent
for Vocational Education

Education Services Division
Mr. David L. Tate
Associate Superintendent

General Operations Division
Mr. James J. Brunstein
Associate Superintendent

STATE BOARD OF EDUCATION



STATE BOARD OF VOCATIONAL EDUCATION

Eddie Basha	President
Tom Espinoza	Vice President
Honorable Carolyn Warner	Executive Officer
C. Diane Bishop	Member
Nolan Blake	Member
Ray Borane	Member
Dr. Eugene M. Hughes	Member
Betty Inman Lee	Member
Karin Kirksey Zander	Member

FUNDING INFORMATION

Project Title: Masonry Curriculum

Educational Act
Under Which the
Funds Were

Administered: Education Amendments of 1976, P.L. 94-482

Source of Grant: Arizona Department of Education
Phoenix, Arizona

Grantee: Arizona Center for Vocational Education
Center for Excellence in Education
Northern Arizona University
Flagstaff, Arizona 86011

Disclaimer: This publication was prepared pursuant to a grant from the Research Coordinating Unit, Arizona Department of Education. Grantees undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Arizona Department of Education position or policy.

Discrimination
Prohibited:

Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Title IX of the Education Amendments of 1972 states: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance." Therefore, the Arizona Center for Vocational Education Project, like every program or activity receiving assistance from the Arizona Department of Education, must operate in compliance with these laws.

Printed by the
Arizona Center for Vocational Education
Flagstaff, Arizona

Total Copies Printed: 100 Unit Printing Cost: \$9.43
Total Printing Cost: \$943.35 Date of Printing: September, 1985
On behalf of the
Arizona Department of Education

FOREWORD

The following materials were written at the Arizona Vocational Educator's Curriculum Academy during July and August, 1985. The Masonry competencies, performance objectives, standards and sample performance guides were developed to complement the Arizona validated competency lists for Construction Trades. The writing team included tradespeople, secondary vocational educators, community college vocational instructors and university professors of construction technology programs.

These materials are provided for use in secondary and postsecondary vocational programs to assist teachers in developing course of study, structuring learning sequences, determining standards of performance and locating resources.

In the constantly changing state of construction trades technology, no claim can be made that these materials will ever be truly complete. However, it is the hope of the Academy contributors that instructors will use these materials to enhance the quality of Vocational Education throughout Arizona.

ACKNOWLEDGMENTS

In the development of this document the contributions of the following individuals were greatly appreciated:

Writing Team:

David Grider	Northern Arizona University	Flagstaff, Arizona
Dr. Clair Hill	Northern Arizona University	Flagstaff, Arizona
Dale Koehler	Purdue University	Romney, Indiana
John Myers	Central Arizona College	Apache Jnct., AZ
Jim Richmond	Northland Pioneer College	Lakeside, Arizona
Paul W. Sharp	Deer Valley High School	Phoenix, Arizona

Project Consultants:

Dr. Barbara Gutheil, Arizona Center for Vocational Education
Charlotte Prickett, Arizona Center for Vocational Education
Dr. Linda Loomis, Arizona Center for Vocational Education

In addition, we are grateful to Kathy Dunn for her leadership and assistance in getting the final curriculum guide edited and printed.

Don Parsons, Manager
Arizona Center for Vocational
Education

Dr. Robert V. Kerwood, Director
Arizona Center for Vocational
Education

EXECUTIVE SUMMARY

This document describes building trades curriculum in the following four areas: plumbing, masonry, carpentry, and electrical. For the development of these curriculum materials a group of teachers were selected to convene in Flagstaff, Arizona for a two week Curriculum Academy in July and August, 1985 at the Arizona Center for Vocational Education. The major purpose of the academy was to review the ARizona validated listings of competencies and tasks in building trades and to, then, write curriculum components to support each competency and task. Under the leadership of Dr. Barbara Gutheil, Dr. Linda Loomis, and Charlotte Prickett, teachers from both the secondary and postsecondary educational levels met and sifted through the existing listings of validated competencies and tasks and then further developed the curriculum components. For each competency and task a standard of performance, condition for performance of the task, source of the standard, and performance guide was developed. We hope that you will find these materials both helpful and meaningful to your students and to your vocational building trades program.

TABLE OF CONTENTS

FOREWORD	ii
ACKNOWLEDGMENTS	iii
EXECUTIVE SUMMARY	iv
COMPETENCY	
A-1 Demonstrate safety knowledge in order to avoid job site accidents	1
A-2 Demonstrate math skills necessary to perform masonry tasks	14
A-3 Use and maintain tools needed to perform masonry tasks	24
A-4 Use and maintain equipment needed to perform masonry tasks	32
A-5 Read and interpret contract document to build structure	39
A-6 Select building materials appropriate to the masonry tasks	49
A-7 Estimate material quantity required to complete a task or project using contracting documents	55
A-8 Layout building and site work to achieve proper building placement	63
B-1 Mix mortar to specifications provided for the job	73
B-2 Build scaffolding as working platforms for block and brick laying	77
B-3 Lay block to specifications provided for the job	82
B-4 Lay brick to specifications provided for the job	100
B-5 Lay composite, cavity and reinforced masonry walls ...	116
B-6 Construct single flue chimney system	136
B-7 Construct masonry fireplace	147
C-1 Lay stone to specifications for the job	165
C-2 Set tile and paving stones	172
D-1 Cleaning, waterproofing, restoration	179
D-2 Waterproofing and dampproofing masonry surfaces	185
D-3 Restore mortar surfaces and joints	191
REFERENCES	199

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.1

TASK: Identify hazard warning signs.

STANDARD OF PERFORMANCE OF TASK:

Designated signs will be matched with the hazard they indicate with an accuracy of 90%.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Samples of common hazard warning signs.

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.2

TASK: Handle material safely.

STANDARD OF PERFORMANCE OF TASK:

Handling procedures for moving and storage of materials per specifications (i.e., handling liquified petroleum gas: Use only in well vented areas. Use only in areas above ground unless positive ventilation is provided).

SOURCE OF STANDARD:

Construction Safety Standards, U.S. Department of the Interior, Bureau of Reclamation, Section II.

CONDITIONS FOR PERFORMANCE OF TASK:

Manufacturers Storage and Handling Requirements.

Material Handling, Storage, and Disposal standard

Construction materials and products (i.e. lumber, cement, plywood, millwork, doors, windows, and/or dangerous and hazardous materials)

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.3

TASK: Practice good housekeeping.

STANDARD OF PERFORMANCE OF TASK:

Housekeeping practices on the job site to be acceptable to the given situation as determined by the job superior.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

List of common housekeeping practices (i.e. walk areas free of debris, saw areas free of unstacked lumber and cutoff pieces).

PERFORMANCE GUIDE:

Con/M

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.4

TASK: Practice ladder and scaffold safety.

STANDARD OF PERFORMANCE OF TASK:

Ladder and scaffold systems to be placed or erected to OSHA specifications with 100% compliance.

SOURCE OF STANDARD: OSHA standards.

CONDITIONS FOR PERFORMANCE OF TASK:

Reference Manual
Extension Ladder
Scaffolding sections
Scaffolding hardware
Fastening tools
Planking and wire

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.5

TASK: Practice fire safety.

STANDARD OF PERFORMANCE OF TASK:

Fires to be extinguished with proper methods and devices at 100% accuracy. Keeps work site free of fire hazards.

SOURCE OF STANDARD:

Construction Safety Standards, Bureau of Reclamation, OSHA

CONDITIONS FOR PERFORMANCE OF TASK:

Fire related hazards and prevention.
Appropriate reactions to fire related hazards.
Fire extinguishing devices.

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.6

TASK: List types of masonry-related chemical and airborne health hazards.

STANDARD OF PERFORMANCE OF TASK:

Knowledge to be demonstrated with 90% accuracy on written evaluation instruments, 100% accuracy on selection of protective devices.

SOURCE OF STANDARD: OSHA Standards.

CONDITIONS FOR PERFORMANCE OF TASK:

List of chemicals, toxic gases, vapors, fumes dusts and mists with the required precautions.

Protective devices (i.e., respirators, life support systems, eye protectors).

PERFORMANCE GUIDE:

Con/M

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid
job site accidents.

PERFORMANCE OBJECTIVE A-1.7

TASK: Practice the use of respirators.

STANDARD OF PERFORMANCE OF TASK:

Respirators shall fully cover the mouth, nose, and eyes
(depending on the type) with no air leaks at seals or skin
contact.

SOURCE OF STANDARD: OSHA Standards.

CONDITIONS FOR PERFORMANCE OF TASK:

Instructions for respirator use.
Respirators of various common types.

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.8

TASK: Detect potential electrical hazards.

STANDARD OF PERFORMANCE OF TASK:

Potential electrical hazards shall be detected and reported immediately as evidenced by work sites free of electrical hazards as per OSHA regulations.

SOURCE OF STANDARD: OSHA Safety Standards.

CONDITIONS FOR PERFORMANCE OF TASK:

Hazards which suggest potential electrical shorts (i.e., frayed cords, overloaded circuits, cords exposed to water, crane booms near power line).

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.9

TASK: Operate hand tools safely.

STANDARD OF PERFORMANCE OF TASK:

Tools to be used only for intended purposes according to industry use and safety practices (i.e., tools to be kept sharp and clean, tools to be kept in good repair).

SOURCE OF STANDARD:

Industry guidelines and writing team consensus.

CONDITIONS FOR PERFORMANCE OF TASK:

Hand tools (i.e., hammers, chisels, trowels, jointing tools)

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.10

TASK: Operate power tools safely.

STANDARD OF PERFORMANCE OF TASK:

Tools to be used only for intended purpose according to industry use and safety practices (i.e., equipment to be grounded; fences and guards should be left in place; machine to be stopped for adjustments and blade changes).

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Power tools (i.e., block saw, circular saw, block splitter)

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.11

TASK: Explain purpose and scope of OSHA.

STANDARD OF PERFORMANCE OF TASK:

80% accuracy when answering questions relating to the purpose and scope of OSHA legislation.

SOURCE OF STANDARD: OSHA, Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

OSHA Standards.

Summary of Federal Regulations Relating to OSHA Legislation.

PERFORMANCE GUIDE:

Con/M

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.12

TASK: Identify employee rights/responsibilities.

STANDARD OF PERFORMANCE OF TASK:

80% accuracy when answering questions relating to Employee rights/responsibilities.

SOURCE OF STANDARD: OSHA, Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

OSHA Standards

PERFORMANCE GUIDE:

COMPETENCY: A-1 Demonstrate safety knowledge in order to avoid job site accidents.

PERFORMANCE OBJECTIVE A-1.13

TASK: Complete basic Red Cross first aid course.

STANDARD OF PERFORMANCE OF TASK:

Meet minimum standards required by Red Cross for completion of first aid course.

SOURCE OF STANDARD: OSHA, Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Certified Red Cross First Aid instructor
Red Cross First Aid manual
Required First Aid supplies
Instructional materials and equipment

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.1

TASK: Add, subtract, multiply and divide whole numbers.

STANDARD OF PERFORMANCE OF TASK:

Used math skills to solve fraction problems with an accuracy of 85% or better.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the use of addition, subtraction, multiplication and division of fractions.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.2

TASK: Add, subtract, multiply and divide fractions.

STANDARD OF PERFORMANCE OF TASK:

Used math skills to solve fraction problems with an accuracy of 85% or better.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the use of addition, subtraction, multiplication and division of fractions.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.3

TASK: Add, subtract, multiply and divide decimals.

STANDARD OF PERFORMANCE OF TASK:

Used math skills to solve decimal problems, with at least 85% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the use of addition, subtraction, multiplication, and division of decimals.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.4

TASK: Calculate geometric areas of squares, rectangles, triangles, and circles.

STANDARD OF PERFORMANCE OF TASK:

Used math skills to calculate geometric areas, with at least 85% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the calculation of areas of squares, rectangles, triangles, circles and ellipses.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.5

TASK: Convert areas between square inches, square feet, and square yards.

STANDARD OF PERFORMANCE OF TASK:

Converted area problems of square inches, square feet and square yards between the various units with an accuracy of 85% or better.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the conversion of areas between square inches, square feet and square yards.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.6

TASK: Compute volumes of cubes, rectangles, cylinders, pyramids.

STANDARD OF PERFORMANCE OF TASK:

Computed volume problems of cubes, rectangles, cylinder, pyramids with an accuracy of 85% or better.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the computation of volumes of cubes, rectangles, cylinders and pyramids.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.7

TASK: Convert volumes between cubic inches, cubic feet, and cubic yards.

STANDARD OF PERFORMANCE OF TASK:

Converted volumes of cubic inches, cubic feet and cubic yards between the various units with an accuracy of 85% or better.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the conversion of volumes between cubic inches, cubic feet and cubic yards.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.8

TASK: Solve simple first degree algebraic equations.

STANDARD OF PERFORMANCE OF TASK:

Used math skills to solve algebraic equation, with at least 85% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the solution of simple first degree algebraic equations.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.9

TASK: Solve problems involving sides of triangles.

STANDARD OF PERFORMANCE OF TASK:

Used math skills to solve problems involving sides of triangles, with at least 85% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the solution of problem involving sides of triangles.

PERFORMANCE GUIDE:

COMPETENCY: A-2 Demonstrate math skills necessary to perform masonry tasks

PERFORMANCE OBJECTIVE A-2.10

TASK: Calculate slopes and pitches.

STANDARD OF PERFORMANCE OF TASK:

Used math skills to calculate slopes and pitches, with at least 85% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given a situation requiring the calculation of roof slopes and pitches.

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.1

TASK: Identify the general carpentry tools used in masonry construction.

STANDARD OF PERFORMANCE OF TASK:

Carpentry tools to be identified as to type and use with 100% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various carpentry tools used by mason (i.e., hand saw, hammer, chalk line, skill saw)

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.2

TASK: Read and transfer dimensions using measuring devices.

STANDARD OF PERFORMANCE OF TASK:

Measurements to the nearest 1/16 inch (unless other tolerances are specified).

Measuring devices matched to specific need, transfer marks clearly.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Folding ruler
Flexible steel tape
Framing square

Material to be measured
Marking instrument

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.3

TASK: Establish plumb and level lines using plumb bobs, string lines, mason's levels, and straightedges

STANDARD OF PERFORMANCE OF TASK:

Tolerances for accuracy of vertical lines shall be determined by job specifications and type of construction.

Tolerances for accuracy of horizontal lines shall be determined by job specifications and the type or phase of construction (i.e., block placement variation from level 0-20' - 1/8" maximum, 10-20' - 3/16" maximum)

SOURCE OF STANDARD: Uniform Building Code

CONDITIONS FOR PERFORMANCE OF TASK:

Plumb bob	Hand level
Builder's level	Leveling rod
Marking devices	Straightedges
Stringlines	

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.4

TASK: Select and use proper mortar mixing tools.

STANDARD OF PERFORMANCE OF TASK:

Masonry tools to be identified as to type and use with 100% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various mortar mixing tools

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.5

TASK: Select and use proper trowels for specific applications.

STANDARD OF PERFORMANCE OF TASK:

Appropriate trowels for application will be selected and used as determined by industry practices.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types of masonry trowels (i.e., square, narrow, pointed, duck bill).

Masonry walls to be laid

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.6

TASK: Select and use proper jointing tools for specific applications.

STANDARD OF PERFORMANCE OF TASK:

Joints shall be tight and clean, in the shape required by specifications.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types of jointing tools (i.e., V-joint, long and short convex).

Joints needing to be tooled.

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.7

TASK: Select and use hammers and chisels for cutting and trimming.

STANDARD OF PERFORMANCE OF TASK:

Masonry units shall be cut to required sizes and shapes as determined by application, meeting industry practices. Safety glasses used at all times.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types of hammers and chisels.
Masonry units to be cut and fitted.
Safety glasses.

PERFORMANCE GUIDE:

COMPETENCY: A-3 Use and maintain tools needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-3.8

TASK: Select and use brushes and cleaning tools.

STANDARD OF PERFORMANCE OF TASK:

Masonry shall be free of mortar smears, mortar drips, tar, paint, and dirt.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various brushes and cleaning tools (i.e., stiff bristle brushes, wire brushes, rubber gloves, sponges, rubbing stone, trowel).

Masonry requiring cleaning.

PERFORMANCE GUIDE:

COMPETENCY: A-4 Use and maintain equipment needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-4.1

TASK: Select and use mortar transporting devices.

STANDARD OF PERFORMANCE OF TASK:

Transport mortar to work area without spilling or damaging standing construction work.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Mortar transporting equipment (i.e., wheelbarrows, georgia buggy, power wheelbarrow).

Mixed mortar

PERFORMANCE GUIDE:

COMPETENCY: A-4 Use and maintain equipment needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-4.2

TASK: Use and maintain power mortar mixer.

STANDARD OF PERFORMANCE OF TASK:

Mortar shall not exceed mixer capacity. Protective covers and shields shall be in place at all times. Safety glasses and proper clothing must be worn. Safety rules to be followed with 100% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Power mortar mixer, electric or gasoline.
Mortar mixing materials.
Safety glasses.

PERFORMANCE GUIDE:

COMPETENCY: A-4 Use and maintain equipment needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-4.3

TASK: Use and maintain power masonry saw.

STANDARD OF PERFORMANCE OF TASK:

Masonry unit to be cut to $\pm 1/8$ " of required dimensions.
Safety rules to be followed with 100% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Power masonry saw
Adjusting tools
Masonry units
Safety glasses

PERFORMANCE GUIDE:

COMPETENCY: A-4 Use and maintain equipment needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-4.4

TASK: Operate hydraulic masonry splitter.

STANDARD OF PERFORMANCE OF TASK:

Masonry unit shall be split to $\pm 1/4$ " of required dimension. Safety rules to be followed with 100% accuracy. Use safety glasses at all times.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Hydraulic splitter
Masonry units
Safety glasses

PERFORMANCE GUIDE:

COMPETENCY: A-4 Use and maintain equipment needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-4.5

TASK: Operate grout pump.

STANDARD OF PERFORMANCE OF TASK:

Operation of pump shall conform to manufacturers operating guidelines. Safety rules to be followed with 100% accuracy. Equipment service schedule shall be maintained.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Grout pump
Manufacturer's operating instructions
Safety glasses and safety equipment

PERFORMANCE GUIDE:

COMPETENCY: A-4 Use and maintain equipment needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-4.6

TASK: Operate tuckpoint grinder.

STANDARD OF PERFORMANCE OF TASK:

Masonry joints to be cut out reasonably square to a depth of 1/2" - 1", or as specified by job supervisor. Safety rules to be followed with 100% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Tuckpoint grinder
Masonry surface/joints
Safety glasses

PERFORMANCE GUIDE:

COMPETENCY: A-4 Use and maintain equipment needed to perform masonry tasks.

PERFORMANCE OBJECTIVE A-4.7

TASK: Operate material hoisting equipment.

STANDARD OF PERFORMANCE OF TASK:

Operation of equipment shall conform to manufacturer's operating guidelines. Safety rules to be followed with 100% accuracy. Equipment service schedule shall be maintained.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various hoisting equipment
Manufacturer's operating instructions
Safety glasses and safety equipment

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.1

TASK: Read scale rules.

STANDARD OF PERFORMANCE OF TASK:

Stated represented length of lines, using correct architect scale assigned each line, with 100% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given ten lines of different length
Architect's scale

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.2

TASK: Draw sketches of blueprint segments and false work.

STANDARD OF PERFORMANCE OF TASK:

Made a sketch of basic parts of a blueprint segment or false work, which showed all dimension and method of construction.

SOURCE OF STANDARD: V-TECS: Carpentry, 1976, p. 50

CONDITIONS FOR PERFORMANCE OF TASK:

Plan and specifications

Given situation in which a sketch is to be made

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.3

TASK: Interpret architectural symbols.

STANDARD OF PERFORMANCE OF TASK:

Correctly identified twenty-two of twenty-five symbols.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

List of twenty-five A.I.A. symbols

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.4

TASK: Read schedules and legends.

STANDARD OF PERFORMANCE OF TASK:

Located and interpreted schedule information on plan and recorded information on sheet, with 85% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given plan and schedules.
Recording sheet.

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.5

TASK: Read/interpret sections and details.

STANDARD OF PERFORMANCE OF TASK:

Identified needed dimension with no omissions.

Identified material type and grade or quality needed.

Identified method, manner or sequence of assembly as needed.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications

Given situation in which construction information is to be extracted.

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.6

TASK: Read/interpret written specifications.

STANDARD OF PERFORMANCE OF TASK:

Interpreted specification information and completed specification sheet, with 85% accuracy.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given plan and specifications.

Special form sheet.

Given situation in which construction information is to be extracted.

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.7

TASK: Read/interpret shop drawings.

STANDARD OF PERFORMANCE OF TASK:

Identified needed dimensions with no omissions.

Identified material type and grade or quality needed.

Identified method, manner or sequence of assembly as needed.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications.

Given situation in which construction information is to be extracted.

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.8

TASK: Read/interpret mechanical, electrical and plumbing drawings.

STANDARD OF PERFORMANCE OF TASK:

Identified required dimension, with no omissions.

Recorded material sizes, quality and quantity as required.

Identified method, manner, or sequence of assembly, as needed.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given plan and specifications.

Given situation in which construction information is to be extracted.

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.9

TASK: Read/interpret architectural drawings.

STANDARD OF PERFORMANCE OF TASK:

Identified needed dimensions, with no omissions.

Identified material type and grade or quality needed.

Identified method, manner or sequence of assembly, as needed.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given plans and specifications.

Given situation in which construction information is to be extracted.

PERFORMANCE GUIDE:

COMPETENCY: A-5 Read and interpret contract document to build structure.

PERFORMANCE OBJECTIVE A-5.10

TASK: Read/interpret local codes.

STANDARD OF PERFORMANCE OF TASK:

Identified required information from local building codes, with no omissions. Identified material type and grade as required by local code. Identified method, manner, or sequence of assembly as required by local code.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Given plans, specifications, and building codes.
Given situation in which construction information is to be extracted.

PERFORMANCE GUIDE:

COMPETENCY: A-6 Select building materials appropriate to the masonry task.

PERFORMANCE OBJECTIVE A-6.1

TASK: Identify basic types and uses of concrete masonry units.

STANDARD OF PERFORMANCE OF TASK:

Types and sizes of masonry units to be identified with 90% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types and sizes of concrete masonry units (i.e., stretcher, jamb, sash, bond beam, etc.)

PERFORMANCE GUIDE:

1. Acquire masonry unit manufacturer's catalog and charts listing available units and depicting units as to size and shape.
2. Identify the proper use of each unit.
3. Identify the proper location of these units in a completed structure.

COMPETENCY: A-6 Select building materials appropriate to the masonry task.

PERFORMANCE OBJECTIVE A-6.2

TASK: Identify basic types and uses of brick.

STANDARD OF PERFORMANCE OF TASK:

From actual units and manufacturer's catalogs and charts, identify the bricks specified, by shape, size and intended use.

Types and sizes of brick to be identified with 90% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types and sizes of clay brick (i.e., building brick, face brick, textured brick).

PERFORMANCE GUIDE:

COMPETENCY: A-6 Select building materials appropriate to the masonry task.

PERFORMANCE OBJECTIVE A-6.3

TASK: Identify types and uses of Portland cements and lime.

STANDARD OF PERFORMANCE OF TASK:

Type and specific uses of Portland cement and lime shall be identified with 100% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types of Portland cement (i.e., Type I, II, III, IV).

Hydrated lime.

PERFORMANCE GUIDE:

1. Read listed reference material.
2. Identify from reference material and manufacturer's charts, the proper types of Portland cement and lime for each intended use.

COMPETENCY: A-6 Select building materials appropriate to the masonry task.

PERFORMANCE OBJECTIVE A-6.4

TASK: Identify types and uses of mortar.

STANDARD OF PERFORMANCE OF TASK:

Identify the mixing ratios and uses for each type of mortar with 100% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Information and specifications on various types of mortar (i.e., type M, S, N, O).

PERFORMANCE GUIDE:

1. Read listed reference material and building specifications.
2. From information provided, identify the various types of mortar, and the specified use for each.

COMPETENCY: A-6 Select building materials appropriate to the masonry task.

PERFORMANCE OBJECTIVE A-6.5

TASK: Identify types and uses of block cleaning and sealing materials.

STANDARD OF PERFORMANCE OF TASK:

Identify types of cleaning and sealing materials and their specific application with 90% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types of cleaning and sealing materials (i.e., hydrochloric acid, silicone sealers, asphalt materials). Information on cleaning and sealing materials.

PERFORMANCE GUIDE:

1. Read building specifications and manufacturer's catalogues and information sheets.
2. Identify the various cleaners and sealers and their intended uses from information provided.

COMPETENCY: A-6 Select building materials appropriate to the masonry task.

PERFORMANCE OBJECTIVE A-6.6

TASK: Identify types and uses of block and brick wall reinforcement materials.

STANDARD OF PERFORMANCE OF TASK:

Identify type of reinforcement and its specific application with 90% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Various types of reinforcement material (i.e., Z-ties, truss ties, ladder ties, reinforcement rods)

PERFORMANCE GUIDE:

1. Read all available information from manufacturers of masonry reinforcement materials.
2. Identify various types of reinforcement and specific use for each.

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.1

TASK: Estimate the number of masonry units.

STANDARD OF PERFORMANCE OF TASK:

Masonry units to be estimated for exact amount and 8-12% then added, depending on type, for waste.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard estimating forms

PERFORMANCE GUIDE:

1. Study plans and specifications to determine masonry requirements.
2. Determine the number of square feet in a brick wall by the wall area method.
3. Calculate wall area for all masonry walls and total areas.
4. Subtract area of openings.
5. Determine size of mortar joint and type of bond.
6. Determine number of masonry units per square foot.
7. Multiply total wall area by masonry units per square unit of measurement (allow for waste).
8. Record number of masonry units on standard estimating form.

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.2

TASK: Estimate the amount of mortar.

STANDARD OF PERFORMANCE OF TASK:

Shall be determined by joint width, thickness, and the number and size of masonry units. Additional waste factors should be added as per industry standards.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard estimating form

PERFORMANCE GUIDE:

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.3

TASK: Estimate the amount of grout.

STANDARD OF PERFORMANCE OF TASK:

Calculate the volume of voids to be filled and add a waste factor of 5-10% depending on job needs.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard estimating forms

PERFORMANCE GUIDE:

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.4

TASK: Estimate the amount of masonry reinforcing and anchors.

STANDARD OF PERFORMANCE OF TASK:

Anchors shall be taken off individually. Reinforcing shall take into account all laps, corners, and special angles.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard layout forms

PERFORMANCE GUIDE:

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.5

TASK: Estimate the amount of stone veneer.

STANDARD OF PERFORMANCE OF TASK:

Stone shall be estimated by square foot and by cubic feet and/or weight. Waste factors should be added appropriately for type of material.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard estimating forms

PERFORMANCE GUIDE:

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.6

TASK: Estimate time for construction.

STANDARD OF PERFORMANCE OF TASK:

Time for construction shall be determined by applying productive standards to quantities of materials, as per company historical records and for accepted industry guidelines (i.e., Construction Estimating Reference Data, Sarviel or Means Estimating Guidelines).

SOURCE OF STANDARD: Consensus of writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standardized estimating forms
Calculator
Estimating manuals and handbooks

PERFORMANCE GUIDE:

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.7

TASK: Formulate materials lists allowing standard waste percentages using blueprints and specifications.

STANDARD OF PERFORMANCE OF TASK:

Material lists shall follow industry format in specifying thickness, width, length, style, color and other necessary descriptive information.

Standard waste percentages used shall be from a verifiable source of authority.

Material lists shall be complete with no substantive omissions.

SOURCE OF STANDARD: Consensus of writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Estimating manuals and handbooks

PERFORMANCE GUIDE:

COMPETENCY: A-7 Estimate material quantity required to complete a task or project using contracting documents.

PERFORMANCE OBJECTIVE A-7.8

TASK: Determine quality of materials.

STANDARD OF PERFORMANCE OF TASK:

Used working drawings and specifications and completed specification check sheet for the grades of framing and finish products required per AIA standard.

SOURCE OF STANDARD: Consensus of writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
American Institute of Architects (AIA)
Applicable building codes

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.1

TASK: Operate site layout tools.

STANDARD OF PERFORMANCE OF TASK:

Follow correct set-up procedure. Use instruments to establish rough grades and elevations to a tolerance of $\pm 1/8"$.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Transit level and leveling rod
100 ft. measuring tape
Stakes and sledge hammer
Mason's line

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.2

TASK: Layout building lines.

STANDARD OF PERFORMANCE OF TASK:

Proper setback and side yard will be maintained as closely to local building code as possible.

Corner stakes will be positioned according to plans, $\pm 1/2"$

Reference line to be located according to plot plan.

SOURCE OF STANDARD:

Carpentry and Building Construction -- Unit 17

CONDITIONS FOR PERFORMANCE OF TASK:

Plot plan
Transit level and leveling rod
100 ft. measuring tape
Stakes and sledge hammer
Mason's line

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.3

TASK: Layout offset lines.

STANDARD OF PERFORMANCE OF TASK:

Offset beyond interference of work to be performed (4' standard).

Installed to resist movement. Accuracy of location to $\pm 1/2"$.

SOURCE OF STANDARD:

Carpentry and Building Construction -- Unit 17
Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plot plan	Mason's line
Transit level and leveling rod	100 ft. measuring tape
Stakes and sledge hammer	

PERFORMANCE GUIDE:

Con/C

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.4

TASK: Read engineers rods.

STANDARD OF PERFORMANCE OF TASK:

Read scale on engineers rod to within 1/100 of a foot.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Engineer's Rods (Philly, Linker) or drawn simulation.

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.5

TASK: Utilize story pole.

STANDARD OF PERFORMANCE OF TASK:

Marks to be made to a tolerance of $\pm 1/16"$ as determined by plan elevations.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

1X2 or 1X4 board, minimum 8' long
Plans and specifications
Combination square

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.6

TASK: Transfer elevations from bench marks to site project.

STANDARD OF PERFORMANCE OF TASK:

Set reference stake securely in place to elevation accuracy of $\pm .01$ of foot.

SOURCE OF STANDARD:

Carpentry and Building Construction -- Unit 17

CONDITIONS FOR PERFORMANCE OF TASK:

Transit level and engineers rod
Sledge hammer and stakes
Plot plan

PERFORMANCE GUIDE:

1. Locate bench mark at building site.
2. Measure distance and direction of approximate area of construction from bench mark using plans and specifications.
3. Set grade stake at reference point within approximate area of construction.
4. Set and level builder's level.
5. Check bench mark elevation using builder's level.
6. Place engineer's rod at bench mark.
7. Take reading to establish bench mark elevation.
8. Place engineer's rod at reference point.
9. Adjust elevation of engineer's rod to bench mark reading.
10. Mark elevation on grade stake.

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.7

TASK: Check layouts for squareness using measuring methods.

STANDARD OF PERFORMANCE OF TASK:

Measurements on diagonals to within 1/4".

SOURCE OF STANDARD:

Carpentry and Building Construction -- Unit 17

CONDITIONS FOR PERFORMANCE OF TASK:

100 ft. tape
Paper and pencil

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.8

TASK: Locate rough openings.

STANDARD OF PERFORMANCE OF TASK:

Determine locations within tolerance of rough openings specified for the installation of individual items. Use plan elevations to determine location of finished items.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications

Shop drawings of items located in masonry walls (i.e., doors, windows, vents, ducts, etc.).

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.9

TASK: Position corner pole.

STANDARD OF PERFORMANCE OF TASK:

Horizontal layout of leads to be within $\pm 1/8"$. Vertical positioning of metal pole to be within $\pm 1/8"$ of plumb from the building layout mark.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Metal corner pole
4' mason's level
Building layout mark

PERFORMANCE GUIDE:

COMPETENCY: A-8 Layout building and site work to achieve proper building placement.

PERFORMANCE OBJECTIVE A-8.10

TASK: Identify patterns and bonds.

STANDARD OF PERFORMANCE OF TASK:

Patterns and bonds to be properly identified by name with 85% accuracy.

SOURCE OF STANDARDS: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Information on various types of structural and pattern bonds (i.e., common, running, stock, Flemish, English, etc).

PERFORMANCE GUIDE:

COMPETENCY: B-1 Mix mortar to specifications provided for the job.

PERFORMANCE OBJECTIVE B-1.1

TASK: Determine mortar ingredients for specific mixes.

STANDARD OF PERFORMANCE OF TASK:

Mix mortar with the ratio of ingredients provided by specifications. Convert ratios to standard product units of the ingredients.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Mix design specifications.

PERFORMANCE GUIDE:

COMPETENCY: B-1 Mix mortar to specifications provided for the job.

PERFORMANCE OBJECTIVE B-1.2

TASK: Dry mix ingredients in proper proportion.

STANDARD OF PERFORMANCE OF TASK:

Dry ingredients thoroughly blended.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Mixer or mortar box.
2. Shovel.
3. Hoe.
4. Dry mortar ingredients (i.e., cement, lime, sand, additives).

PERFORMANCE GUIDE:

COMPETENCY: B-1 Mix mortar to specifications provided for the job.

PERFORMANCE OBJECTIVE B-1.3

TASK: Mix mortar to proper consistency manually with hand tools and equipment.

STANDARD OF PERFORMANCE OF TASK:

Mortar of the proper consistency will stick to the trowel when the trowel is turned upside down.

SOURCE OF STANDARD: Mortar skills (Kreh).

CONDITIONS FOR PERFORMANCE OF TASK:

1. Mortar ingredients dry mixed.
2. Mortar box.
3. Shovel.
4. Hoe.
5. Wheelbarrel.
6. Trowel.
7. Specifications.

PERFORMANCE GUIDE:

COMPETENCY: B-1 Mix mortar to specifications provided for the job.

PERFORMANCE OBJECTIVE B-1.4

TASK: Mix mortar to proper consistency with a power mixer.

STANDARD OF PERFORMANCE OF TASK:

Mortar of the proper consistency will stick to the trowel when the trowel is turned upside down. Safety regulations shall be followed with 100% accuracy.

SOURCE OF STANDARD: Mortar skills.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Mortar ingredients.
2. Mortar mixer.
3. Shovel.
4. Wheelbarrel.
5. Trowel.
6. Specifications.
7. Safety glasses.

PERFORMANCE GUIDE:

COMPETENCY: B-2 Build scaffolding as working platforms for block and brick laying.

PERFORMANCE OBJECTIVE B-2.1

TASK: Identify scaffolding components.

STANDARD OF PERFORMANCE OF TASK:

Identify the individual components of scaffolding with a 90% accuracy.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

One masonry scaffolding setup (i.e., sections, top rail, diagonal brace, ladder, mudsills, etc.).

Scaffolding safety standards (ADOSH).

PERFORMANCE GUIDE:

COMPETENCY: B-2 Build scaffolding as working platforms for block and brick laying.

PERFORMANCE OBJECTIVE B-2.2

TASK: Identify safe assembly procedures.

STANDARD OF PERFORMANCE OF TASK:

Identify the safe assembly procedure for each component, including the sequential order, with 90% accuracy.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

One masonry scaffolding setup (i.e., sections, top rail, diagonal brace, ladder, mudsills, etc.).

Scaffolding safety standards (ADOSH).

PERFORMANCE GUIDE:

COMPETENCY: B-2 Build scaffolding as working platforms for block and brick laying.

PERFORMANCE OBJECTIVE B-2.3

TASK: Erect tubular scaffolding.

STANDARD OF PERFORMANCE OF TASK:

Assemble and erect scaffolding sections, meeting required safety standards for assembly and securing components.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Three masonry scaffolding setups (i.e., sections, top rail, diagonal braces, ladder, mudsills, etc.).

Scaffolding safety standards (ADOSH).

PERFORMANCE GUIDE:

COMPETENCY: B-2 Build scaffolding as working platforms for block and brick laying.

PERFORMANCE OBJECTIVE B-2.4

TASK: Place and secure platforms and brackets.

STANDARD OF PERFORMANCE OF TASK:

Place platforms and secure as required by the scaffolding safety standards. Attach brackets and place platform on brackets as required by the scaffolding safety standards.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Assembled sections of scaffolding.

Various types of platforms and brackets.

Scaffolding safety standards (ADOSH).

PERFORMANCE GUIDE:

COMPETENCY: B-2 Build scaffolding as working platforms for block and brick laying.

PERFORMANCE OBJECTIVE B-2.5

TASK: Place and secure ladders.

STANDARD OF PERFORMANCE OF TASK:

Place and secure ladders as required by the scaffolding safety standards. Ladders must not exceed maximum height per section.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Assembled sections of scaffolding.

Sections of portable or stationary ladders.

Scaffolding safety standards (ADOSH).

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.1

TASK: Assemble materials in the work area.

STANDARD OF PERFORMANCE OF TASK:

Materials to be located within easy reach of the mason without blocking access to and from the construction area.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Materials to be stocked (i.e., block, mortar, reinforcing)
Convenience equipment (i.e., wheelbarrow, tongs, forklift)

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.2

TASK: Set mortar pans

STANDARD OF PERFORMANCE OF TASK:

Mortar pans shall be located in a position which allows easy access for the mason and the hod carrier. Bases shall be level and solid.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Mortar pan

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.3

TASK: Transfer building lines to foundation.

STANDARD OF PERFORMANCE OF TASK:

Building lines shall be transferred to foundations with an accuracy of $\pm 1/8"$.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mason's string
Footings in place
Plumb bob or spirit level
Batter boards

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.4

TASK: Dry bond project.

STANDARD OF PERFORMANCE OF TASK:

Determine the layout of masonry units which will most efficiently use full units or make the least noticeable cuts. Maintain head joint as per specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Footings which has wall and opening layouts

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.5

TASK: Lay corner blocks.

STANDARD OF PERFORMANCE OF TASK:

Corner must be square and level within $\pm 1/16$ " of specifications, elevation within $\pm 1/8$ " of specifications.

SOURCE OF STANDARD: Greenville County Curriculum Guide

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mortar board
Mixed mortar
Footings with layout
Standard Masonry tool kit
Masonry units

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.6

TASK: Lay base course.

STANDARD OF PERFORMANCE OF TASK:

Base course shall be laid to $\pm 1/8"$ of line and level.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Stretcher units
Power masonry saw (if cuts are required)
Mixed mortar
Footing with layout
Standard Masonry Tool kit
Mortar board

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.7

TASK: Lay corner and straight leads.

STANDARD OF PERFORMANCE OF TASK:

Corners to be laid on $\pm 1/8"$ building layout, plumb and level. Leads to be straight within $\pm 1/8"$, with mortar joints to be $3/8"$, $\pm 1/6"$ unless otherwise specified.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Stretcher and corner block
Power Masonry saw (if cuts required)
Footing with layout
Standard masonry tool kit
Mortar board
Mixed mortar

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.8

TASK: Lay block from leads.

STANDARD OF PERFORMANCE OF TASK:

Lead shall not exceed 6 masonry units in length at its base.
Lead shall be tailed to a straightness of $\pm 1/16"$ and plumb.
Hold lead to the building line within $\pm 1/8"$.

SOURCE OF STANDARD: Modern Masonry, Unit 16, 19 (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mixed mortar
Standard masonry tool kit
Straight edge
Mortar board

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.9

TASK: Lay intersecting walls.

STANDARD OF PERFORMANCE OF TASK:

Intersecting walls shall be laid plumb and level within $\pm 1/8$ " of design instructions.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Power masonry saw (if cuts required)
Intersecting footings with layout
Standard masonry tool kit
Mortar boards
Mixed mortar

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.10

TASK: Lay block pilasters.

STANDARD OF PERFORMANCE OF TASK:

Pilaster block shall be plumb and level and located within $\pm 1/8"$ of layout.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Pilaster block
Standard masonry tool kit
Mixed mortar

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.11

TASK: Install expansion joints.

STANDARD OF PERFORMANCE OF TASK:

Expansion joint to be installed as per specifications and manufacturer's recommendations. Material should fit to masonry units without discernable voids.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Expansion joint materials (i.e., rubber, copper fiber)
Plans and specifications
Manufacturer's specifications

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.12

TASK: Install joint and vertical reinforcement.

STANDARD OF PERFORMANCE OF TASK:

Laps of reinforcement to be cut within $\pm 1/8"$ of specification length. Gauge or size and grade to be as specified.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Rebar
Plans and specifications
Horizontal joint reinforcing
Cutting tools (i.e., wire cutters, bolt cutters, gas cutting torch)

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.13

TASK: Finish joints.

STANDARD OF PERFORMANCE OF TASK:

Joints to be shaped and finished as to specifications and free of holes and gaps.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Jointing and finishing tools (i.e., forged, sled runner, stamped)
Joint rakers

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.14

TASK: Locate lintels and inserts.

STANDARD OF PERFORMANCE OF TASK:

Locate all inserts within $\pm 1/8$ " of plan dimensions.

Lintels to be located as per plans and specifications, level and within $\pm 1/8$ " of plan dimensions.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Measuring tools

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.15

TASK: Lay header blocks.

STANDARD OF PERFORMANCE OF TASK:

Vertical layout to be consistent from one side of opening to other to prevent hogs in the wall.

Lay headers in line with courses on each side of opening within $\pm 1/8"$.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Lintels in place
Header blocks

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.16

TASK: Place grout in block cells.

STANDARD OF PERFORMANCE OF TASK:

Grout shall not be spilled on wall surfaces.
Grout shall meet specified slump and strength required in the specification. Reinforcement rod be installed to meet location and overlap according to specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Grout pump or bucket
Scaffolding
Block wall
Reinforcing rods

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.17

TASK: Place insulation in block cells.

STANDARD OF PERFORMANCE OF TASK:

Rigid insulation shall be installed with no gaps or voids between sheets as per manufacturers specifications. Loose fill shall be poured into block cells in a manner which leaves no voids.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Insulation (i.e., loose fill, rigid)
Mastic (if required)
Manufacturer's specifications
Block walls

PERFORMANCE GUIDE:

COMPETENCY: B-3 Lay block to specifications provided for the job.

PERFORMANCE OBJECTIVE B-3.18

TASK: Lay wall caps.

STANDARD OF PERFORMANCE OF TASK:

Lay cap units level and plumb to $\pm 1/8$ " of the required wall plane. Anchor bolts and mortar wash.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and schedules
Cap units
Standard Masonry tool kit
Mortar
Anchor bolts

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.1

TASK: Assemble materials in the work area.

STANDARD OF PERFORMANCE OF TASK:

Materials to be located within easy reach of the mason without blocking access to and from the construction area.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Materials to be stocked (i.e., brick, mortar, reinforcing)
Convenience equipment (i.e., wheelbarrow, tongs, forklift)

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.2

TASK: Set mortar pans

STANDARD OF PERFORMANCE OF TASK:

Mortar pans shall be located in a position which allows easy access for the mason and the hod carrier. Bases shall be level and solid.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Mortar pan

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.3

TASK: Transfer building lines to foundation.

STANDARD OF PERFORMANCE OF TASK:

Building lines shall be transferred to foundations with an accuracy of $\pm 1/8"$.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mason's string
Footings in place
Plumb bob or spirit level
Batter boards

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.4

TASK: Dry bond project.

STANDARD OF PERFORMANCE OF TASK:

Determine the layout of masonry units which will most efficiently use full units or make the least noticeable cuts. Maintain head joint as per specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Footing which has wall and opening layouts

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.5

TASK: Lay corner blocks.

STANDARD OF PERFORMANCE OF TASK:

Corner must be square and level within $\pm 1/16$ " of specifications, elevation within $\pm 1/8$ " of specifications.

SOURCE OF STANDARD: Greenville County Curriculum Guide

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mortar board
Mixed mortar
Footing with layout
Standard Masonry tool kit
Masonry units

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.6

TASK: Lay base course.

STANDARD OF PERFORMANCE OF TASK:

Base course shall be laid to $\pm 1/8"$ of line and level.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Stretcher units
Power masonry saw (if cuts are required)
Mixed mortar
Footing with layout
Standard Masonry Tool kit
Mortar board

PERFORMANCE GUIDE

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.7

TASK: Lay corner and straight leads.

STANDARD OF PERFORMANCE OF TASK:

Corners to be laid on $\pm 1/8$ " building layout, plumb and level. Leads to be straight within $\pm 1/8$ ", with mortar joints to be $3/8$ ", $\pm 1/6$ " unless otherwise specified.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Stretcher and corner block
Power Masonry saw (if cuts required)
Footing with layout
Standard masonry tool kit
Mortar board
Mixed mortar

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.8

TASK: Lay block from leads.

STANDARD OF PERFORMANCE OF TASK:

Lead shall not exceed 6 masonry units in length at its base.
Lead shall be tailed to a straightness of $\pm 1/16"$ and plumb.

Hold lead to the building line within $\pm 1/8"$.

SOURCE OF STANDARD: Modern Masonry, Unit 16, 19 (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mixed mortar
Standard masonry tool kit
Straight edge
Mortar board

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.9

TASK: Lay intersecting walls.

STANDARD OF PERFORMANCE OF TASK:

Intersecting walls shall be laid plumb and level within $\pm 1/8$ " of design instructions.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Power masonry saw (if cuts required)
Intersecting footings with layout
Standard masonry tool kit
Mortar boards
Mixed mortar

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.10

TASK: Lay brick pilasters.

STANDARD OF PERFORMANCE OF TASK:

Pilaster block shall be plumb and level and located within $\pm 1/8$ " of layout.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Pilaster brick
Standard masonry tool kit
Mixed mortar

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.11

TASK: Install expansion joints.

STANDARD OF PERFORMANCE OF TASK:

Expansion joint to be installed as per specifications and manufacturer's recommendations. Material should fit to masonry units without discernable voids.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Expansion joint materials (i.e., rubber, copper fiber)
Plans and specifications
Manufacturer's specifications

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.12

TASK: Install joint reinforcement.

STANDARD OF PERFORMANCE OF TASK:

SOURCE OF STANDARD:

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Horizontal joint reinforcement
Cutting tools (i.e., wire cutters, bolt cutters)

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.13

TASK: Finish joints.

STANDARD OF PERFORMANCE OF TASK:

Joints to be shaped and finished as to specifications and free of holes and gaps.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Jointing and finishing tools (i.e., forged, sled runner, stamped)
Joint rakers

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.14

TASK: Locate lintels and inserts.

STANDARD OF PERFORMANCE OF TASK:

Locate all inserts within $\pm 1/8$ " of plan dimensions.

Lintels to be located as per plans and specifications, level and within $\pm 1/8$ " of plan dimensions.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Measuring tools

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.15

TASK: Lay header bricks.

STANDARD OF PERFORMANCE OF TASK:

Vertical layout to be consistent from one side of opening to other to prevent hogs in the wall.

Lay headers in line with courses on each side of opening within $\pm 1/8"$.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Lintels in place
Header blocks

PERFORMANCE GUIDE:

COMPETENCY: B-4 Lay brick to specifications provided for the job.

PERFORMANCE OBJECTIVE B-4.16

TASK: Lay wall caps.

STANDARD OF PERFORMANCE OF TASK:

Lay cap units level and plumb to $\pm 1/8$ " of the required wall plane. Anchor bolts and mortar wash.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and schedules
Cap units
Standard Masonry tool kit
Mortar
Anchor bolts

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.1

TASK: Assemble materials in the work area.

STANDARD OF PERFORMANCE OF TASK:

Materials to be located within easy reach of the mason without blocking access to and from the construction area.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Materials to be stocked (i.e. block, brick, mortar, metal ties)
Convenience equipment (i.e. wheelbarrow, tongs, fork lift)

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.2

TASK: Set mortar pans

STANDARD OF PERFORMANCE OF TASK:

Mortar pans shall be located in a position which allows easy access for the mason and the hod carrier. Bases shall be level and solid.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Mortar pan

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.3

TASK: Transfer building lines to foundation.

STANDARD OF PERFORMANCE OF TASK:

Building lines shall be transferred to foundations with an accuracy of $\pm 1/8"$.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mason's string
Footings in place
Plumb bob or spirit level
Batter boards

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.4

TASK: Dry bond project.

STANDARD OF PERFORMANCE OF TASK:

Determine the layout of masonry units which will most efficiently use full units or make the least noticeable cuts. Maintain head joint as per specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Footings which have wall and opening layouts

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.5

TASK: Lay corner blocks.

STANDARD OF PERFORMANCE OF TASK:

Corner must be square and level within $\pm 1/16"$ of specifications, elevation within $\pm 1/8"$ of specifications.

SOURCE OF STANDARD: Greenville County Curriculum Guide

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mortar board
Mixed mortar
Footings with layout
Standard Masonry tool kit
Masonry block and brick
Reinforcement materials
Masonry power saw (if cuts are required)

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.6

TASK: Lay base course.

STANDARD OF PERFORMANCE OF TASK:

Base course shall be laid to $\pm 1/8$ " of line and level.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry block and brick
Power masonry saw (if cuts are required)
Mixed mortar
Footing with layout
Standard Masonry Tool kit
Mortar board
Reinforcement materials

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.7

TASK: Lay corner and straight leads.

STANDARD OF PERFORMANCE OF TASK:

Corners to be laid on $\pm 1/8$ " building layout, plumb and level. Leads to be straight within $\pm 1/8$ ", with mortar joints to be $3/8$ ", $\pm 1/6$ " unless otherwise specified.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Power masonry saw (if cuts are required)
Mixed mortar
Footing with layout
Standard Masonry Tool kit
Mortar board
Reinforcement materials

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.8

TASK: Lay block from leads.

STANDARD OF PERFORMANCE OF TASK:

Lead shall not exceed 6 masonry units in length at its base.
Lead shall be tailed to a straightness of $\pm 1/16"$ and plumb.

Hold lead to the building line within $\pm 1/8"$.

SOURCE OF STANDARD: Modern Masonry, Unit 16, 19 (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Power masonry saw (if cuts are required)
Mixed mortar
Footings with layout
Standard Masonry Tool kit
Mortar board
Reinforcement materials

PERFORMANCE GUIDE

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.9

TASK: Install metal ties between tiers in cavity walls.

STANDARD OF PERFORMANCE OF TASK:

Metal ties shall be placed and overlapped to $\pm 1/4"$ of plans and specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Mixed mortar
Masonry units in place
Metal ties

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.10

TASK: Lay intersecting walls.

STANDARD OF PERFORMANCE OF TASK:

Intersecting walls shall be laid plumb and level within $\pm 1/8$ " of design instructions.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Power masonry saw (if cuts are required)
Mixed mortar
Footings with layout
Standard Masonry Tool kit
Mortar board
Reinforcement materials

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.11

TASK: Lay pilasters with masonry units.

STANDARD OF PERFORMANCE OF TASK:

Pilaster block shall be plumb and level and located within $\pm 1/8$ " of layout.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Pilaster block and brick
Mortar board
Mixed mortar
Standard masonry tool kit

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.12

TASK: Install expansion joints.

STANDARD OF PERFORMANCE OF TASK:

Expansion joint to be installed as per specifications and manufacturer's recommendations. Material should fit to masonry units without discernable voids.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Expansion joint materials (i.e., rubber, copper fiber)
Plans and specifications
Manufacturer's specifications

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.13

TASK: Install joint and vertical reinforcement.

STANDARD OF PERFORMANCE OF TASK:

Laps of reinforcement to be cut within $\pm 1/8"$ of specification length. Gauge or size and grade to be as specified.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Rebar
Plans and specifications
Horizontal joint reinforcing
Cutting tools (i.e., wire cutters, bolt cutters, gas cutting torch)

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.14

TASK: Install joint reinforcement.

STANDARD OF PERFORMANCE OF TASK:

Laps of reinforcement to be cut within $\pm 1/8"$ of specification length. Gauge or size and grade to be as specified.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Horizontal joint reinforcement
Cutting tools (i.e., wire cutters, bolt cutters, gas cutting torch)

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.15

TASK: Finish joints.

STANDARD OF PERFORMANCE OF TASK:

Joints to be shaped and finished as to specifications and free of holes and gaps.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications

Jointing and finishing tools (i.e., forged, sled runner, stamped)

Joint rakers

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.16

TASK: Locate lintels and inserts.

STANDARD OF PERFORMANCE OF TASK:

Locate all inserts within $\pm 1/8$ " of plan dimensions.

Lintels to be located as per plans and specifications, level and within $\pm 1/8$ " of plan dimensions.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Measuring tools

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.17

TASK: Lay header masonry units.

STANDARD OF PERFORMANCE OF TASK:

Vertical layout to be consistent from one side of opening to other to prevent hogs in the wall.

Lay headers in line with courses on each side of opening within $\pm 1/8$ ".

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Lintels in place
Header blocks and bricks

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.18

TASK: Place grout in block cells.

STANDARD OF PERFORMANCE OF TASK:

Grout shall not be spilled on wall surfaces.
Grout shall meet specified slump and strength required in the specification. Reinforcement rod be installed to meet location and overlap according to specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Grout pump or bucket
Scaffolding
Masonry wall
Reinforcing rods

PERFORMANCE GUIDE:

Con/M

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.19

TASK: Place insulation in block cells.

STANDARD OF PERFORMANCE OF TASK:

Rigid insulation shall be installed with no gaps or voids between sheets as per manufacturers specifications. Loose fill shall be poured into block cells in a manner which leaves no voids.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Insulation (i.e., loose fill, rigid)
Mastic (if required)
Manufacturer's specifications
Masonry walls

PERFORMANCE GUIDE:

COMPETENCY: B-5 Lay composite, cavity and reinforced masonry walls.

PERFORMANCE OBJECTIVE B-5.20

TASK: Lay wall caps.

STANDARD OF PERFORMANCE OF TASK:

Lay cap units level and plumb to $\pm 1/8$ " of the required wall plane. Anchor bolts and mortar wash.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and schedules
Cap units
Standard Masonry tool kit
Mortar
Anchor bolts

PERFORMANCE GUIDE:

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.1

TASK: Locate and place chimney foundation.

STANDARD OF PERFORMANCE OF TASK:

Concrete shall be poured within $\pm 1/4"$ of location indicated by plans and $\pm 1/8"$ of level. Surface shall be float finished level.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard masonry tool kit
Concrete and concrete form materials
Builders level
Reinforcing steel

PERFORMANCE GUIDE:

1. Read site plans to locate foundation.
2. Grade area, and form foundation.
3. Install reinforcing.
4. Pour and float specified mix of concrete.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.2

TASK: Mix specified mortar.

STANDARD OF PERFORMANCE OF TASK:

Mortar shall be mixed in the proportions indicated by specifications to a consistency which will stick to a trowel when the trowel is turned upside down.

SOURCE OF STANDARD: Masonry Skills (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Specifications
Mortar ingredients
Hoe
Mixer or mortar box
Shovel

PERFORMANCE GUIDE:

1. Read plans and specifications to determine proper type of mortar to be used.
2. Have appropriate mixing equipment and tools at job site.
3. Make certain of an adequate supply of clean masonry sand, and specified type of mortar.
4. Mix mortar, adding proper amount of water to acquire the right consistency.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.3

TASK: Assemble materials in the work area.

STANDARD OF PERFORMANCE OF TASK:

Materials to be located within easy reach of the mason without blocking access to and from the construction area.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Materials to be stocked
Convenience equipment (i.e., wheelbarrow, tongs, forklift)

PERFORMANCE GUIDE:

1. Read plans and specifications to determine types of materials needed.
2. Estimate quantities of each type material needed.
3. Have materials delivered to jobsite and properly stored.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.4

TASK: Dry bond project.

STANDARD OF PERFORMANCE OF TASK:

Determine the layout of masonry units which will most efficiently use full units or make the least noticeable cuts. Maintain head joint as per specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Footing which has wall and opening layouts

PERFORMANCE GUIDE:

1. Read plans and specifications to determine layout.
2. Dry bond the first course to obtain the proper spacing.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.5

TASK: Lay base course.

STANDARD OF PERFORMANCE OF TASK:

Base course shall be laid to $\pm 1/8"$ of line and level.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Stretcher units
Power masonry saw (if cuts are required)
Mixed mortar
Footing with layout
Standard Masonry Tool kit
Mortar board

PERFORMANCE GUIDE:

1. Complete previous task.
2. Make certain dry bond layout was accurate.
3. Assemble properly mixed mortar, tools and mortar board or pan on jobsite.
4. Lay first course in mortar.
5. Level and square all sides.
6. Check the inside space to make certain the flue liner will fit.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.6

TASK: Install cleanout door.

STANDARD OF PERFORMANCE OF TASK:

Clean out door must be installed level and plumb above finish grade if installed to open to the outside.

Install as per specifications at least 2" below thimble.

SOURCE OF STANDARD: Masonry Skills (Kreh)
Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Prefabricated cleanout door
Mortar
Standard masonry tool kit
Chimney system laid to third course

PERFORMANCE GUIDE:

1. Complete previous task.
2. Lay the second course, installing the cleanout door as specified.
3. Anchor the frame to the brickwork with a metal dip or tie.
4. Lay 5 more courses, walling in the cleanout door.
5. Recheck the door to be sure that it is level and plumb.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.7

TASK: Cut and install first flue liner.

STANDARD OF PERFORMANCE OF TASK:

Cut for thimble to be made within $\pm 1/4$ " of thimble diameter.

Flue liner to be laid plumb and level at least 1" below point of thimble entry.

Thimble to be smaller than intended flue diameter which will enter the flue liner.

SOURCE OF STANDARD: Masonry Skills (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Flue liner
Standard masonry tool kit
Small tile cutter
Sand
Mortar

PERFORMANCE GUIDE:

1. Complete previous task.
2. Cut 4 long bats, 4 1/2" in length.
3. Lay these in mortar on the 8th course, allowing the rough end to project inside the flue space.
4. Strike joints as needed.
5. Lay 3 more courses to anchor header bricks.
6. Pack flue liner with sand, and mark thimble hole to be cut.
7. Cut hole carefully with pointed steel chisel and hammer.
8. Install first flue liner, by setting bottom edge on brick bolt ledge.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.8

TASK: Install thimble.

STANDARD OF PERFORMANCE OF TASK:

Thimble to be installed with a minimum of 8" of solid brick surrounding.

SOURCE OF STANDARD: Masonry Skills (Kreh)
Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

UBC and specifications
Ceramic or metal flue collar
Flue liner cut to receive
Standard masonry tool kit
Mortar (fire clay if specified)

PERFORMANCE GUIDE:

1. Complete previous task.
2. Lay the brick work, installing the thimble at the required height (see plans).
3. Solidly point up around the thimble and flue liner.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.9

TASK: Complete chimney and flue liner.

STANDARD OF PERFORMANCE OF TASK:

Chimney to be maintained plumb and straight within $\pm 1/4"$ per 8' lift.

Secure scaffolding in accordance to OSHA standards.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Scaffolding
Masonry units
Standard Masonry tool kit
Flue liner
Mortar

PERFORMANCE GUIDE:

1. Complete previous task.
2. Continue laying brick until the top of the liner is reached.
3. Set the second section of the flue liner.
4. Check second liner section for level and plumb.
5. Cut off any projecting mortar on the inside of the lining.
6. Build the chimney to the height shown on the plans.
7. Strike remaining joints and brush the work.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.10

TASK: Install integral flashing.

STANDARD OF PERFORMANCE OF TASK:

Counterflashing to be installed in proper location to receive roof flashing.

Step flashing to be installed with a minimum 2" lap.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Required flashing or counter flashing
Standard masonry tool kit
Chimney to be flashed

PERFORMANCE GUIDE:

1. Complete previous task.
2. Read plans and specifications to determine height and slope of roof.
3. Select proper counterflashing material.
4. Install counterflashing in mortar joints and secure with metal wedges.
5. Point up open joints with mortar.

COMPETENCY: B-6 Construct single flue chimney system.

PERFORMANCE OBJECTIVE B-6.11

TASK: Install chimney cap.

STANDARD OF PERFORMANCE OF TASK:

Cap to be installed as per specification and codes.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Chimney cap (prefabricated)
Standard masonry tool kit
Mortar

PERFORMANCE GUIDE:

1. Complete previous task.
2. Apply a wash coat of mortar on the last course of brick sloped toward the extended flue liner.
3. Smooth the work with the trowel.

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.1

TASK: Locate and place chimney foundation.

STANDARD OF PERFORMANCE OF TASK:

Concrete shall be poured within $\pm 1/4"$ of location indicated by plans and $\pm 1/8"$ of level. Surface shall be float finished level.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard masonry tool kit
Concrete and concrete form materials
Builders level
Reinforcing steel

PERFORMANCE GUIDE:

1. Read site plans to locate foundation.
2. Grade area, and form foundation.
3. Install reinforcing.
4. Pour and float specified mix of concrete.

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.2

TASK: Mix specified mortar.

STANDARD OF PERFORMANCE OF TASK:

Mortar shall be mixed in the proportions indicated by specifications to a consistency which will stick to a trowel when the trowel is turned upside down.

SOURCE OF STANDARD: Masonry Skills (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Specifications
Mortar ingredients
Hoe
Mixer or mortar box
Shovel

PERFORMANCE GUIDE:

1. Read plans and specifications to determine proper type of mortar to be used.
2. Have appropriate mixing equipment and tools at job site.
3. Make certain of an adequate supply of clean masonry sand, and specified type of mortar.
4. Mix mortar, adding proper amount of water to acquire the right consistency.

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.3

TASK: Assemble materials in the work area.

STANDARD OF PERFORMANCE OF TASK:

Materials to be located within easy reach of the mason without blocking access to and from the construction area.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Materials to be stocked (i.e., block, mortar, reinforcing)
Convenience equipment (i.e., wheelbarrow, tongs, forklift)

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.4

TASK: Dry bond project.

STANDARD OF PERFORMANCE OF TASK:

Determine the layout of masonry units which will most efficiently use full units or make the least noticeable cuts. Maintain head joint as per specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Footing which has wall and opening layouts

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.5

TASK: Lay ash pit.

STANDARD OF PERFORMANCE OF TASK:

Base course and floor shall be laid to $\pm 1/8$ " of specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Mixed mortar
Standard masonry tool kit
Mortar board
Footing with layout

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.6

TASK: Install cleanout door.

STANDARD OF PERFORMANCE OF TASK:

Clean out door must be installed level and plumb above finish grade if installed to open to the outside.

Install as per specifications at least 2" below thimble.

SOURCE OF STANDARD: Masonry Skills (Kreh)
Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry units
Prefabricated cleanout door
Mortar
Standard masonry tool kit
Chimney system laid to third course

PERFORMANCE GUIDE:

1. Complete previous task.
2. Lay the second course, installing the cleanout door as specified.
3. Anchor the frame to the brickwork with a metal dip or tie.
4. Lay 5 more courses, walling in the cleanout door.
5. Recheck the door to be sure that it is level and plumb.

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.7

TASK: Install rough hearth.

STANDARD OF PERFORMANCE OF TASK:

Concrete shall be poured within $\pm 1/4$ " of location indicated by plans and $\pm 1/8$ " of level. Surface shall be float finished level.

Location of rough-in for ash pump shall be $\pm 1/8$ " of specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard masonry tool kit
Concrete and concrete forms
Builder's level
Reinforcing steel

PERFORMANCE GUIDE:

1. Read site plans to locate foundation.
2. Grade area, and form foundation.
3. Install reinforcing.
4. Pour and float specified mix of concrete.

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.8

TASK: Install ash dump in hearth.

STANDARD OF PERFORMANCE OF TASK:

Ash dump to be installed to specifications.

Firebrick to be cut if required.

Fasteners shall be used if required.

Top surface of ash dump should be flush with surface of finish hearth.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Metal ash dump

Fasteners (if needed)

Installed rough hearth

Standard masonry tool kit

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.9

TASK: Lay masonry firebox/install metal firebox.

STANDARD OF PERFORMANCE OF TASK:

Firebrick to be installed $\pm 1/8"$ to specifications, or
metal firebox to be installed to manufacturers specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Standard masonry tool kit
Firebrick or metal firebox
Mixed mortar - fire clay
Installed rough hearth

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.10

TASK: Lay smokesheff.

STANDARD OF PERFORMANCE OF TASK:

Smokesheff to be installed $\pm$ 1/8" of plans and specifications, and specifications of damper. Surface shall be troweled smooth and free of voids.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Installed masonry firebox
Masonry brick and firebrick
Mixed mortar - fireclay
Standard masonry tool kit

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.11

TASK: Install damper.

STANDARD OF PERFORMANCE OF TASK:

Damper shall be installed to manufacturer's specifications.
Damper must operate smoothly and be airtight when closed.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Metal damper
Installed smokeshef
Standard masonry tool kit

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.12

TASK: Corbel chimney walls for flue liner support.

STANDARD OF PERFORMANCE OF TASK:

Corbel flue support as required by specifications and must fully support flue liner on all sides. Projection of brick per course shall not exceed 1/2 the units thickness.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Masonry brick
Mixed mortar
Standard Masonry tool kit
Mortar board

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.13

TASK: Lay face brick.

STANDARD OF PERFORMANCE OF TASK:

Lead shall not exceed 6 masonry units in length at its base.
Lead shall be tailed to a straightness of $\pm 1/16$ " and
plumb.
Hold lead to the building line within $\pm 1/8$ ".

SOURCE OF STANDARD: Modern Masonry, Unit 16, 19 (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Face brick
Mortar
Standard masonry tool kit
Straight edge
Mortar board

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.14

TASK: Install brick mantel.

STANDARD OF PERFORMANCE OF TASK:

Corbel mantel support as required by specifications or projection per course shall not exceed 1/2 the unit's thickness.

SOURCE OF STANDARD: Masonry Skills (Kreh)
Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Brick
Mortar
Standard masonry tool kit
Plans and specifications

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.15

TASK: Lay finish hearth.

STANDARD OF PERFORMANCE OF TASK:

Hearth shall be laid flat and tight as per design and specifications.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Hearthstone
Mortar
Standard masonry tool kit

PERFORMANCE GUIDE:

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.16

TASK: Complete chimney and flue liner.

STANDARD OF PERFORMANCE OF TASK:

Chimney to be maintained plumb and straight within $\pm 1/4"$ per 8' lift.
Secure scaffolding in accordance to OSHA standards.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Scaffolding
Masonry units
Standard Masonry tool kit
Flue liner
Mortar

PERFORMANCE GUIDE:

1. Complete previous task.
2. Continue laying brick until the top of the liner is reached.
3. Set the second section of the flue liner.
4. Check second liner section for level and plumb.
5. Cut off any projecting mortar on the inside of the lining.
6. Build the chimney to the height shown on the plans.
7. Strike remaining joints and brush the work.

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.17

TASK: Install integral flashing.

STANDARD OF PERFORMANCE OF TASK:

Counterflashing to be installed in proper location to receive roof flashing.

Step flashing to be installed with a minimum 2" lap.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Required flashing or counter flashing
Standard masonry tool kit
Chimney to be flashed

PERFORMANCE GUIDE:

1. Complete previous task.
2. Read plans and specifications to determine height and slope of roof.
3. Select proper counterflashing material.
4. Install counterflashing in mortar joints and secure with metal wedges.
5. Point up open joints with mortar.

COMPETENCY: B-7 Construct Masonry fireplace.

PERFORMANCE OBJECTIVE B-7.18

TASK: Install chimney cap.

STANDARD OF PERFORMANCE OF TASK:

Cap to be installed as per specification and codes.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Plans and specifications
Chimney cap (prefabricated)
Standard masonry tool kit
Mortar

PERFORMANCE GUIDE:

1. Complete previous task.
2. Apply a wash coat of mortar on the last course of brick sloped toward the extended flue liner.
3. Smooth the work with the trowel.

COMPETENCY: C-1 Lay stone to specifications for the job.

PERFORMANCE OBJECTIVE C-1.1

TASK: Spread stone for examination of shape, texture, and characteristics.

STANDARD OF PERFORMANCE OF TASK:

Stones to be matched for size and complimenting shape which will best maintain mortar joint width.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Assorted stone approved for construction.

PERFORMANCE GUIDE:

COMPETENCY: C-1 Lay stone to specifications for the job.

PERFORMANCE OBJECTIVE C-1.2

TASK: Locate wall on foundation.

STANDARD OF PERFORMANCE OF TASK:

Wall shall be laid to the established line within $\pm 1/2$ " with the main body of the stone.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Plans and specifications.
2. Layout tools (i.e., chalk line, tape, etc.)
3. Foundation, poured and cured.

PERFORMANCE GUIDE:

COMPETENCY: C-1 Lay stone to specifications for the job.

PERFORMANCE OBJECTIVE C-1.3

TASK: Mix specified mortar.

STANDARD OF PERFORMANCE OF TASK:

Mortar shall be mixed in the proportions indicated by specifications to a consistency which will stick to a trowel when the trowel is turned upside down.

SOURCE OF STANDARD: Masonry Skills (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Specifications
Mortar ingredients
Hoe
Mixer or mortar box
Shovel

PERFORMANCE GUIDE:

1. Read plans and specifications to determine proper type of mortar to be used.
2. Have appropriate mixing equipment and tools at job site.
3. Make certain of an adequate supply of clean masonry sand, and specified type of mortar.
4. Mix mortar, adding proper amount of water to acquire the right consistency.

COMPETENCY: C-1 Lay stone to specifications for the job.

PERFORMANCE OBJECTIVE C-1.4

TASK: Place bottom course of stone.

STANDARD OF PERFORMANCE OF TASK:

Bottom course to be bedded in mortar, maintaining wall line $\pm 1/2$ " to main surface body of the stone. Larger stones are to be laid on the bottom.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Base course stones.
3. Mortar.
4. Laid out foundation.

PERFORMANCE GUIDE:

COMPETENCY: C-1 Lay stone to specifications for the job.

PERFORMANCE OBJECTIVE C-1.5

TASK: Cut, trim, and fit stone.

STANDARD OF PERFORMANCE OF TASK:

Fit stone, cutting and trimming as needed, in order to maintain uniform mortar joint thickness. Dry fit stone before installing mortar, during laying process.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Stone.
3. Masons saw (SMTK).
4. Chisels.
5. Hammer.

PERFORMANCE GUIDE:

COMPETENCY: C-1 Lay stone to specifications for the job.

PERFORMANCE OBJECTIVE C-1.6

TASK: Complete stone wall.

STANDARD OF PERFORMANCE OF TASK:

Top to be level within $\pm 1/2$ " for variation of highest point to lowest, from a level plane. Lay wall plumb.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Stone (flat for cap, or with flat side).
3. SMTK.
4. Wood wedges.

PERFORMANCE GUIDE:

COMPETENCY: C-1 Lay stone to specifications for the job.

PERFORMANCE OBJECTIVE C-1.7

TASK: Install finish course.

STANDARD OF PERFORMANCE OF TASK:

Install final course to a tolerance $\pm 1/2$ " of a level line.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Plans and specifications.
2. SMTK.
3. Cap stones.
4. Mortar.
5. Wood wedges.

PERFORMANCE GUIDE:

COMPETENCY: C-2 Set tile and paving stones.

PERFORMANCE OBJECTIVE C-2.1

TASK: Prepare surface for tile.

STANDARD OF PERFORMANCE OF TASK:

Surface shall be free of dirt, oil or grease and loose material.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Cleaning tools (as required).
2. Grinding tools (as required).
3. Cleaning materials (compressed air, soap and water).

PERFORMANCE GUIDE:

COMPETENCY: C-2 Set tile and paving stones.

PERFORMANCE OBJECTIVE C-2.2

TASK: Install thin-set tile.

STANDARD OF PERFORMANCE OF TASK:

Layout to be from the center of the room. Maintain spacing straight and uniform as conditions indicate.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Tile mastic.
3. Tile nippers.
4. Tile cutter.
5. Tile.

PERFORMANCE GUIDE:

COMPETENCY: C-2 Set tile and paving stones.

PERFORMANCE OBJECTIVE C-2.3

TASK: Install grout-set tile

STANDARD OF PERFORMANCE OF TASK:

Maintain uniform grout spacing. Bed tile so as to maintain level.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Tile cutter.
3. Tile.
4. Bedding grout.
5. Tile setting tools.

PERFORMANCE GUIDE:

COMPETENCY: C-2 Set tile and paving stones.

PERFORMANCE OBJECTIVE C-2.4

TASK: Grout and finish joints.

STANDARD OF PERFORMANCE OF TASK:

Grout shall be removed from tile surface before it has totally set. All joints shall be uniform with no voids and finished flush with the surface of the tile.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Grout.
3. Sponge.
4. Water bucket.

PERFORMANCE GUIDE:

COMPETENCY: C-2 Set tile and paving stones.

PERFORMANCE OBJECTIVE C-2.5

TASK: Prepare surface for paving stone.

STANDARD OF PERFORMANCE OF TASK:

Bedding sand to be leveled to $\pm 1/4"$.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Screed boards.
3. Bedding sand.

PERFORMANCE GUIDE:

COMPETENCY: C-2 Set tile and paving stones.

PERFORMANCE OBJECTIVE C-2.6

TASK: Install paving stones.

STANDARD OF PERFORMANCE OF TASK:

Install stones with consistent joints and surface elevation.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Paving stones.
3. Masonry saw.
4. Standard masons tool kit.

PERFORMANCE GUIDE:

COMPETENCY: C-2 Set tile and paving stones.

PERFORMANCE OBJECTIVE C-2.7

TASK: Finish joints.

STANDARD OF PERFORMANCE OF TASK:

All surfaces of tile flat and free from grout. All joints concave and uniform depth according to specifications.

SOURCE OF STANDARD: Masonry skills.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Standard masons tool kit.
2. Mason's brush.
3. Sponge.
4. Slicker.

PERFORMANCE GUIDE:

COMPETENCY: D-1 Cleaning, waterproofing, restoration.

PERFORMANCE OBJECTIVE D-1.1

TASK: Identify causes of stains and surface blemishes.

STANDARD OF PERFORMANCE OF TASK:

Given hypothetical situation in which stains and surface blemishes occur on masonry units, identifies causes and types with 85% accuracy.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Information regarding types of stains and surface blemishes and their causes.

PERFORMANCE GUIDE:

COMPETENCY: D-1 Cleaning, waterproofing, restoration.

PERFORMANCE OBJECTIVE D-1.2

TASK: Identify and select cleaning agents for stain removal.

STANDARD OF PERFORMANCE OF TASK:

Given hypothetical situations requiring the use of masonry cleaning agents, correct agents will be identified and selected with 85% accuracy.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Information identifying types and uses of cleaning agents.

PERFORMANCE GUIDE:

COMPETENCY: D-1 Cleaning, waterproofing, restoration.

PERFORMANCE OBJECTIVE D-1.3

TASK: Identify protective clothing required for stain removal.

STANDARD OF PERFORMANCE OF TASK:

Given hypothetical situations in which protective clothing is required, types of protection will be identified with 85% accuracy.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Information identifying types of protective clothing used when handling chemicals and abrasives used in cleaning and stain removal.

PERFORMANCE GUIDE:

COMPETENCY: D-1 Cleaning, waterproofing, restoration.

PERFORMANCE OBJECTIVE D-1.4

TASK: Identify tools and equipment for cleaning and stain removal.

STANDARD OF PERFORMANCE OF TASK:

Given hypothetical cleaning situations, the correct tools and equipment will be selected with an accuracy of 85%.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

Assorted tools and equipment for cleaning (i.e., brushes, sponges, buffers, sand blaster).

Information concerning use of tools and equipment.

PERFORMANCE GUIDE:

COMPETENCY: D-1 Cleaning, waterproofing, restoration.

PERFORMANCE OBJECTIVE D-1.5

TASK: Clean block and brick.

STANDARD OF PERFORMANCE OF TASK:

Masonry units shall be cleaned to meet specifications, free of stains and smears as required. Care will be taken to protect the environment from hazardous materials. Proper safety procedures to be followed with 100% accuracy.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Masonry units requiring cleaning.
3. Protective clothing (i.e., rubber gloves, face shield, respirator, clothing).
4. Cleaning tools (i.e., brushes, sponges, buffers, pressure sprayer).

PERFORMANCE GUIDE:

COMPETENCY: D-1 Cleaning, waterproofing, restoration.

PERFORMANCE OBJECTIVE: D-1.6

TASK: Remove stains from brick.

STANDARD OF PERFORMANCE OF TASK:

Proper cleaning materials shall be selected and tested on a small section prior to total application. Care will be taken to protect the environment from hazardous materials. Proper safety procedures to be followed with 100% accuracy.

SOURCE OF STANDARD: Writing team.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Specifications.
2. Stained brick.
3. Cleaning materials (i.e., hydrochloric acid, muratic acid, calcium chloride).
4. Cleaning tools.
5. Protective clothing.

PERFORMANCE GUIDE:

COMPETENCY: D-2 Waterproofing and dampproofing masonry surfaces.

PERFORMANCE OBJECTIVE D-2.1

TASK: Identify waterproofing materials and their uses.

STANDARD OF PERFORMANCE OF TASK:

Samples of waterproofing materials will be identified and uses explained with 100% accuracy.

SOURCE OF STANDARD: Advanced Masonry Skills.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Samples of clear silicon sealers.
2. Samples of asphalt base (tar) compounds.
3. Samples of parging materials.

PERFORMANCE GUIDE:

COMPETENCY: D-2 Waterproofing and dampproofing masonry surfaces.

PERFORMANCE OBJECTIVE D-2.2

TASK: Apply clear sealers and primer sealers (fillcoats) to above grade masonry.

STANDARD OF PERFORMANCE OF TASK:

Sealer coat applied evenly with no visible runs or open skips. Sealer applied only to above grade masonry units.

SOURCE OF STANDARD: Advanced Masonry Skills.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Cleaned masonry structure to be sealed.
2. Application brush/spray applicator.
3. Silicon sealer.

PERFORMANCE GUIDE:

COMPETENCY: D-2 Waterproofing and dampproofing masonry surfaces.

PERFORMANCE OBJECTIVE D-2.3

TASK: Apply stucco to above grade masonry.

STANDARD OF PERFORMANCE OF TASK:

Each coat (first and second) to be applied to a thickness from 1/4" to 3/8" resulting in a finished coat of 1/2" to 3/4" thick. Acceptable pattern throughout.

SOURCE OF STANDARD: Advanced Masonry Skills.

CONDITIONS FOR PERFORMANCE OF TASK:

1. Standard masons tool kit.
2. Mortar.
3. Hawk, R.T.M.
4. Materials to mix for stucco.
5. Mortar mixer/mortar box.
6. Finishing trowel.

PERFORMANCE GUIDE:

COMPETENCY: D-2 Waterproofing and dampproofing masonry surfaces.

PERFORMANCE OBJECTIVE D-2.4

TASK: Apply asphalt based material to below grade masonry.

STANDARD OF PERFORMANCE OF TASK:

Each coat (1 to 3) to be applied evenly without skips. No visible cracks or openings for moisture entry.

SOURCE OF STANDARD: Advanced Masonry Skills

CONDITIONS FOR PERFORMANCE OF TASK:

Masonry units below grade, free of mortar drippings or obstructions.
Felt membrane (if necessary)
Asphalt material to apply
Brush/nap and container
Cloths (disposable)

PERFORMANCE GUIDE:

COMPETENCY: D-2 Waterproofing and dampproofing masonry surfaces.

PERFORMANCE OBJECTIVE D-2.5

TASK: Apply membrane waterproofing below grade.

STANDARD OF PERFORMANCE OF TASK:

Layers of membrane (tar paper saturated with sealer) to be free of air pockets and completely saturated with sealer. No visible cracks or spaces for moisture entry.

SOURCE OF STANDARD: Advanced Masonry Skills

CONDITIONS FOR PERFORMANCE OF TASK:

Roll of tar paper
Asphalt primer
Asphalt sealer
Brush/mop
Disposable cloths
Masonry structure to be sealed

PERFORMANCE GUIDE:

Con/M

COMPETENCY: D-2 Waterproofing and dampproofing masonry surfaces.

PERFORMANCE OBJECTIVE D-2.6

TASK: Apply parging and tar compounds below grade.

STANDARD OF PERFORMANCE OF TASK:

Each coat of parging (usually two) applied to a thickness from 1/4" to 3/8" with turn-out at bottom. Coat of tar to be applied evenly with no skips or openings for moisture entry.

SOURCE OF STANDARD: Advanced Masonry Skills

CONDITIONS FOR PERFORMANCE OF TASK:

Standard masoner's tool kit
Mortar hawk
Materials to mix for parging
Mortar mixer/mortar box
Finishing trowel
Brush/mop

PERFORMANCE GUIDE:

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.1

TASK: Identify various types of cracks that occur on masonry walls.

STANDARD OF PERFORMANCE OF TASK:

Cracks must be identified as to size, appearance and probably cause.

Method of repair should be stated.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Masonry wall on which several types of cracks have appeared.

PERFORMANCE GUIDE:

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.2

TASK: Identify masonry restoration tools and equipment.

STANDARD OF PERFORMANCE OF TASK:

Damaged areas need to be identified as to cause and method of repair.

Tools must be selected to perform these tasks.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Standard masonry tool kit

Masonry area needing restoration

PERFORMANCE GUIDE:

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.3

TASK: Remove paint from masonry surface.

STANDARD OF PERFORMANCE OF TASK:

Surface being cleaned must be salvageable. Treated area shall be ready for refinishing.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Masonry surface with deteriorating paint
Standard masonry tool kit
Paint removing chemicals

PERFORMANCE GUIDE:

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.4

TASK: Remove old mortar from joints.

STANDARD OF PERFORMANCE OF TASK:

Cut joints reasonably square 1/2" to 1" deep.

SOURCE OF STANDARD: Advanced Masonry Skills (Kreh)

CONDITIONS FOR PERFORMANCE OF TASK:

Chisels or tuck point grinder
Specifications
Hammer
Walls containing deteriorated mortar

PERFORMANCE GUIDE:

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.5

TASK: Mix mortar for repointing work.

STANDARD OF PERFORMANCE OF TASK:

Mortar must be of proper consistency so as to remain in repointed joint and mixed using the specified type.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Masonry area that needs repointing
Appropriate type of mortar
Clean masonry sand
Vinyl or bonding solution

PERFORMANCE GUIDE

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.6

TASK: Point in the mortar.

STANDARD OF PERFORMANCE OF TASK:

Mortar joints shall be rebuilt to the shape required by specifications or existing work. All holes shall be filled and smoothed.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Mixed mortar

Tuck pointing tool

Mortar joints having voids or deteriorated mortar removed

PERFORMANCE GUIDE:

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.7

TASK: Repair and rebuild old fireplaces.

STANDARD OF PERFORMANCE OF TASK:

Masonry to be restored shall match existing work. Protect roofs and other finished surfaces from damage from falling debris.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Masonry units (i.e., fire brick, block, brick as needed)
Assessment of repair needs for existing fireplace
Standard masonry tool kit
Cutting and demolition equipment
Scaffolding

PERFORMANCE GUIDE:

COMPETENCY: D-3 Restore mortar surfaces and joints.

PERFORMANCE OBJECTIVE D-3.8

TASK: Repair and rebuild chimney tops.

STANDARD OF PERFORMANCE OF TASK:

Scaffold must be built so that work can be done safely and easily.

Original construction design must be followed.

Repaired chimney top should be weather tight.

SOURCE OF STANDARD: Writing team

CONDITIONS FOR PERFORMANCE OF TASK:

Chimney needing top repair

Standard masonry tool kit

Mortar, sand, and mixing tools.

Appropriate scaffolding to reach work area

PERFORMANCE GUIDE:

REFERENCE LIST

MASONRY

- ADOSH, 1979, Occupational Safety Standards for General Industry, Illinois: C.C.H., Inc.
- A.G.C., undated, Brick Laying Curriculum, Oklahoma.
- Beall, Christine, 1984, Masonry Design and Detailing, New Jersey, Prentice Hall, Inc.
- Dagostino, Frank R., 1978, Estimating in Building Construction, Virginia: Reston.
- Dallas Independent School District, 1975, Masonry, Teacher Implementation Plan, New York: Harper and Row Publishers, Inc.
- Dallas Independent School District, 1975, Masonry Evaluation Instruments, New York: Harper and Row Publishers, Inc.
- Day, Gerald F., and Herschbach, Dennis R. (undated) Resource Guide For Performance-Based Masonry Instruction, Maryland: University Maryland.
- Kicklighter, Clois E. 1977, Modern Masonry, Illinois, Goodheart-Wilcox Co., Inc.
- Kreh, R.T., 1982, Masonry Skills, New York, Delmar.
- Kreh, R.T., 1982, Advanced Masonry Skills.
- Sarvel, Ed (undated) Construction Estimating Reference Data, California: Craftsman.
- Sundberg, Elmer, 1984 Building Trades Blueprint Reading, Part I, Illinois: ATS.

MASONRY MATRIX

MASONRY COMPETENCIES

A. Core Competencies

- Demonstrate safety knowledge in order to avoid job site accidents.
- Demonstrate math skills necessary to perform masonry tasks.
- Use and maintain tools needed to perform masonry tasks.
- Use and maintain equipment needed to perform masonry tasks.
- Read and interpret contract document to build structure.
- Select building materials appropriate to the masonry task.
- Estimate material quantity required to complete a task or project using contracting documents.
- Layout building and site work to achieve proper building placement.

B. Block and Brick Laying

- Mix mortar to specifications provided for the job.
- Build scaffolding as working platforms for block and brick laying.
- Lay block to specifications provided for the job.
- Lay brick to specifications provided for the job.
- Lay composite, cavity, and reinforced masonry walls.
- Construct single flue chimney system.
- Construct fireplace.

C. Stone Laying and Tile Setting

- Lay stone to specifications provided for the job.

- Set tile and paving stone.

D. Cleaning, Waterproofing, and Restoration

- Clean block and brick walls.
- Waterproof and damp proof.
- Restore mortar surfaces and joints.

BASIC MATH SKILLS

SCIENCE

COMMUNICATION SKILLS

RESPONSIBILITY SKILLS

PRIMARY REFERENCE FOR COMPETENCIES	Adds, subtracts, multiplies, divides, and calculates whole numbers, fractions and decimals, and volumes.	Calculates geometric areas and volumes.	Calculates ratios and proportions and costs.	Demonstrates mortar yield, material characteristics, and materials.	Identifies characteristics of structural masonry.	Displays stains and uses proper removal.	Demonstrates knowledge of proper technology.	Reads and interprets knowledge of masonry documents.	Learns and uses appropriate masonry trade terminology.	Communicates effectively orally and in writing.	Asks appropriate questions or clarifies essential building instructions.	Remains current in finding materials and techniques.	Maintains required masonry condition.	Acquires and maintains physical of the trade.	Keeps work area safe and orderly.	Manages time effectively.	Follows instruction and respects authority.	Adapts to changing job conditions and respects job sites, and work assignments, trades.	Exhibits a working knowledge of construction techniques of other trades.	Works without close supervision.	Demonstrates pride in quality workmanship.	Anticipates problems and avoids them.	Gets along with others and works well as a crew member.
1,9																							
12,4	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
9,8									•	•	•	•	•	•	•				•	•	•	•	•
9,8									•	•	•	•	•	•	•				•	•	•	•	•
4,12		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4,11	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
12,9	•	•						•							•	•	•	•	•	•	•	•	•
9,8			•	•				•	•	•	•	•	•	•	•		•	•	•	•	•	•	•
9,1										•	•	•	•	•	•	•	•	•	•	•	•	•	•
9,8,3			•	•				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
9,8,3							•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
9,8,3								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3							•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3									•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3									•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
9,2				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3				•				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
10,3				•					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•